REMARKS/ARGUMENTS

Claims 1-3, 5-6, 8-25, and 27 are pending.

Claims 1 and 27 have been amended.

Claims 4, 7, and 26 have been cancelled.

Support for the amendments is found in the claims and specification, as originally filed. Support for claim 1 can be found on page 48, ln. 7-9, Example 1 (page 72, ln. 7-8) and Example 2 (page 75, ln. 5-7), and claim 26.

No new matter has been added.

Claims 1-13, 16, and 26-27 are rejected under 35 U.S.C. 103(a) over Kawahara et al., US 2002/0028871 (Kawahara et al. I) and Ninomiya et al., EP 1085028. Claims 14-15 are rejected Kawahara et al. I, Ninomiya et al., and Kawahara et al., EP 1072616 (Kawahara et al. II). The rejections are traversed because

(a) the combinations of the references do not describe or suggest melt-kneading the pellet having the water content 0.1-4.5 wt. %;

(b) a skilled artisan would not have been motivated to melt-knead pellets at the water content from 0.1 to 4.5 wt.% because in Ninomiya et al. adjust the water content of the pellets for melt kneading to 5-60 wt.%;

(c) Ninomiya et al. teaches away from the claimed water content of 0.1-4.5 wt. %; and

(d) a combination of the melt kneading at 5-60 wt.% of water in pellets of Ninomiya et al. and the process of Kawahara et al. I suggesting drying the pellets to the water content lower than 1 or 0.5 % is impermissible.

The claimed method

Claim 1 is directed to a process for producing a pellet of an ethylene-vinyl alcohol copolymer (EVOH), comprising:

(1) introducing into a vessel an EVOH solution comprising 50 parts by weight or more of an alcohol having a boiling point of 100°C or less with respect to 100 parts by weight of an EVOH, contacting the solution with water vapor in said vessel to let out said alcohol with water vapor and then letting out from said vessel an EVOH hydrous composition containing 0 to 10 parts by weight of said alcohol and 10 to 1000 parts by weight of water with respect to 100 parts by weight of the EVOH;

(2) cutting the EVOH hydrous composition in a molten state let out from said vessel in (1), thereby obtaining EVOH hydrous composition pellets;

(3) introducing the EVOH hydrous composition pellets obtained in (2) into a dryer to reduce a water content of the pellets;

(4) melt-kneading the pellets having the water content from 0.1 to 4.5 wt. % reduced in (3), in an extruder; and

(5) cutting the EVOH discharged from the extruder in (4), thereby obtaining the pellet of the EVOH.

The claimed process provides an effective removal of an alcohol without deteriorating a working environment and peripheral environment and an efficient removal of water in the EVOH hydrous composition thus obtained. The obtained pellets have less thermal degradation upon the removal of water and a uniform shape. See page 86 of the present specification.

In the process of Claim 1, the EVOH hydrous composition let out from a vessel in (1) is cut in a molten state in (2). Additionally, a water content of the EVOH hydrous composition pellets obtained in (2) is reduced in (3), resulting pellets are melt-kneaded at the water content of 0.1-4.5 wt.% in an extruder in (4), and then the EVOH is cut to the pellet of the EVOH in (5).

As described in the specification, a process of cutting in a molten state, as compared to a process of cutting a strand, does not need to consider a take-off speed for stably forming a strand, which leads to a superior productivity of the pellets (see page 24, ln. 9-12). However, a shape of the pellets obtained by cutting an EVOH hydrous composition in a molten state does not necessarily become uniform. When pellet products, obtained by drying the pellets without employing (4) and (5) of claim 1, are used in molding, their shape may not be uniform and, therefore, the extrusion stability may not be sufficient in molding using the dried pellets (see page 4, ln. 13-17 and page 24, ln. 15-16).

In the process of Claim 1, pellets can be non-uniform at the stage after (2) because the pellets are melt-kneaded in an extruder and then cut for pelletizing again in (4) and (5) to produce a uniform shape. Thus, in terms of productivity of the pellets, a cutting in a molten state (2) is important (see pg. 24, lines 16-21).

Accordingly, in the claimed process, melt-kneading the pellets having the water content of 0.1-4.5 wt. % in an extruder (4) and cutting the EVOH discharged from the extruder (5) are closely linked to cutting in a molten state in (2) in order to obtain superior productivity of the pellets and sufficient extrusion stability in molding using the pellets. Thus, (4) and (5) are important especially when cutting in a molten state as in (2) of claim 1.

The disclosure of the cited references

Kawahara et al. I describe a method for producing an aqueous EVOH composition, which comprises introducing an EVOH solution that contains at least 50 parts by weight, relative to 100 parts by weight of the EVOH therein, of an alcohol having a boiling point of not higher than 100°C., into a vessel, and contacting the solution with water vapor in the vessel, thereby letting the alcohol out along with water vapor and taking the resultant aqueous EVOH composition that contains from 0 to 10 parts by weight of the alcohol and from 10 to 500 parts by weight of water, relative to 100 parts by weight of the EVOH therein, out of the

vessel (see [0012]). Kawahara et al. I describe EVOH pellets produced by cutting the aqueous EVOH composition, and that a melt of the aqueous EVOH composition is directly cut (see [0017]).

The EVOH pellets are generally dried to at most 1 or 0.5 wt. % of water (see [0076]). Thus, Kawahara et al. I describe that the content of water of the EVOH pellets after drying is as low as possible.

Kawahara et al. I do not describe (4) melt-kneading the pellets having a water content of 0.1-4.5 wt. % reduced in (3), in an extruder; and (5) cutting the EVOH discharged from the extruder in (4), thereby obtaining the pellet of the EVOH.

Ninomiya et al. describe that an EVOH species or EVOH composition is precipitated in the *coagulation bath* to form a strand and that the strand is cut to pellet-like pieces, which are then preferably washed with water (see [0041]). Ninomiya et al. describe that the water content of the EVOH species precipitated in a pellet form and washed with water is adjusted to 5 to 60 % by weight prior melt kneading (see [0050]). Ninomiya et al. describe that when the water content of the EVOHJ pellets is less than 5 wt.%, the drying effect of the invention cannot be materialized to the full. See [0051].

Ninomiya et al. only describe that an EVOH species or EVOH compositions are precipitated in the coagulation bath and Kawahara et al. I describe that the conventional coagulation method (such as in Ninomiya et al.) is different and disadvantageous. See [0076].

Thus, a skilled artisan would not have been motivated to modify the method of Kawahara et al. I (a) with the water content of 5-60 wt. % as in Ninomiya et al. because Kawahara et al. describing drying the pellets to the lowest water content (1% or 0.5 %), and (b) with the steps of the coagulation methods of Ninomiya et al. because the conventional coagulation methods are disadvantageous.

Further, Ninomiya et al. teaches away from the claimed water content of 0.1-4.5 wt. % because the water content prior to melt-kneading of Ninomiya et al. is adjusted to 5-60 wt. % and the water content of lower than 5 % provides inferior results (see [0050]-[0051]).

Moreover, a combination of the melt kneading at 5-60 wt.% of water in pellets of Ninomiya et al. and the process of Kawahara et al. I suggesting drying the pellets to the water content lower than 1 or 0.5 % is impermissible because the water contents of the pellets in Ninomiya et al. and Kawahara et al. I are mutually exclusive.

The Examiner has pointed to the water content of dried pellets of Kawahara et al. I (e.g., at most 1% or at most 0.5%) as teaching the claimed water content in the claimed melt-kneading (4). Applicants respectfully disagree because Kawahara et al. I do not describe melt-kneading, the water content of at most 1% or 0.5 % is a content in the final product, and Kawahara et al. I do not describe a range of 0.5-1 % but describes that the water content is at most 1 or 0.5 %.

Kawahara et al. II do not cure the deficiency because Kawahara et al. II do not describe or suggest combining step (2) with steps (4) and (5), as in claim 1.

For these reasons, a skilled artisan would not have reached the claimed processes of when Kawahara et al. I and Ninomiya et al. (and further Kawahara et al. II) would have been combined.

Thus, Kawahara et al. I, Ninomiya et al., and/or Kawahara et al. II do not make the claimed process obvious.

Applicants request that the rejections be withdrawn.

In response to the rejection under 35 U.S.C. 112, second paragraph, claim 27 has been amended. It is believed that claim 27 is clear. Specifically, claim 27 is directed to a water

content difference in the pellets discharged from the dryer in (3) and the extruder in (4). See page 48 of the present specification. Applicants request that the rejections be withdrawn.

A Notice of Allowance for all pending claims is requested.

Respectfully submitted,

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